

Table D-6

Values of Assumed Average Terrain Elevation (AATE) Along the U.S./Canada Border			
Longitude (ϕ) (°West)	Latitude (θ) (°North)	Assumed Average Terrain Elevation	
		Meters	Feet
$65 \leq \phi < 69$	$\theta < 45$	0	0
$65 \leq \phi < 69$	$45 \leq \theta < 46$	91	300
$65 \leq \phi < 69$	$\theta \geq 46$	305	1000
$69 \leq \phi < 73$	ALL	609	2000
$73 \leq \phi < 74$	ALL	152	500
$74 \leq \phi < 78$	ALL	76	250
$78 \leq \phi < 80$	$\theta < 43$	76	250
$78 \leq \phi < 80$	$\theta \geq 43$	152	500
$80 \leq \phi < 90$	ALL	183	600
$90 \leq \phi < 98$	ALL	305	1000
$98 \leq \phi < 102$	ALL	457	1500
$102 \leq \phi < 108$	ALL	762	2500
$108 \leq \phi < 111$	ALL	1066	3500
$111 \leq \phi < 113$	ALL	1219	4000
$113 \leq \phi < 114$	ALL	1524	5000
$114 \leq \phi < 121.5$	ALL	914	3000
$121.5 \leq \phi < 127$	ALL	0	0
$\phi \geq 127$	$54 \leq \theta < 56$	0	0
$\phi \geq 127$	$56 \leq \theta < 58$	152	500
$\phi \geq 127$	$58 \leq \theta < 60$	0	0
*	$60 \leq \theta < 62$	1219	4000
*	$62 \leq \theta < 64$	488	1600
*	$64 \leq \theta < 66$	305	1000
*	$66 \leq \theta < 68$	228	750
*	$68 \leq \theta < 69.5$	457	1500
*	$\theta \geq 69.5$	0	0

*Alaska - British Columbia/Yukon Territory Border

§ 88.819 Protection of Canadian television stations.

Two Canadian television stations provide service in British Columbia in the band 806-890 MHz in accordance with U.S./Canadian Television Agreement of 1952. They are:

Enderby, B.C.	Channel 72	818-824 MHz.
Radium/Hot Springs, B.C	Channel 77	848-854 MHz.

Until reassignment of these stations, they must be protected as follows: the field strength of an interfering mobile radio signal at the station's calculated B contour (where the protected contour crosses the border, that

portion of the border lying within the contour shall be treated as the relevant segment of the B contour) may not exceed 14 dBu for frequencies co-channel with the television channel utilized, and may not exceed 54 dBu in the two adjacent 6 MHz guard bands. The field strength of any interfering signal must be calculated using the FCC Report R-6602 F(50,10) propagation curves at a receiving effective antenna height of 30 feet (9.1 meters).

§ 88.821 Restricted use of 896-901/935-940 MHz in part of Region 1.

Channel assignments for stations to be located in the geographic area in Region 1 enclosed by the United States-Canada border, 71° W longitude and the line beginning at the intersection of 44°25'N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along 70° W longitude to the intersection of 45°45'N, then running West along 45°45'N to the intersection of the United States--Canada border, will be only for 936.5125-937.0000 MHz, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels.

§ 88.823 Restricted use of 896-901/935-940 MHz in part of Region 3.

Channel assignments for stations to be located in the geographic area in Region 3 enclosed by 81W longitude, the arc of a circle of 100 km radius centered at 42°39'30"N latitude and 81°W longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80°30'W longitude to intersect the United States-Canada border West of 81°W, and the United States-Canada border, will be only for 936.5125-937.8750 MHz, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels. U.S. stations must protect Canadian stations operating on 936.5125-937.8750 MHz within an area of 30 km radius from the center city coordinates of London, Ontario (42° 59' N, 81° 14' W).

§ 88.825 Additional frequencies in Region 5.

In Region 5, the frequencies 937.5125-939.9625 MHz may be authorized in the United States under the following conditions:

(a) An assignment may be made if the predicted power flux density (PFD) of a proposed station's signal does not exceed -107 dBW/m2 at the border. The prediction of the PFD is calculated based upon a modified Longley-Rice point-to-point propagation model with time and location variabilities of 10 percent¹ and 3-second digitized terrain data².

(b) Authorizations for frequencies 937.5125-939.9625 MHz in Region 5 are secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding -107 dBW/m2 at or beyond the U.S./Canada border.

¹ G.A. Hufford, A.G. Longley, and W.A. Kissick, A guide to the use of the ITS irregular terrain model in the area prediction mode, NTIA Report 82-100. (Available from U.S. Department of Commerce, National Technical and Information Service (NTIS), Springfield, VA 22161. Accession number PB-217977.)

A.G. Longley and P.L. Rice, Prediction of tropospheric radio transmission loss over irregular terrain - a computer method 1968, ESSA Technical Report ERL 79-ITS 67. (Available from NTIS, Accession number AD-676-874.)

P.L. Rice, A.G. Longley, K.A. Norton, and A.P. Barsis, Transmission loss predictions for tropospheric communication circuits, National Bureau of standards Technical Note 101, Volumes I and II. (Available from NTIS, Accession numbers AD-687-820 and AD-687-821.)

² Level 1 - Digital Terrain Elevation Data, United States Defense Mapping Agency. (Available from National Cartographic Information Center, U.S. Geological Survey, 507 National Center, Reston, VA 22092 as Digital Elevation Model Data in 10x10 units. Two of these units are required to cover each 10x20 map (1:250,000-scale quadrangle) from which the data were produced.

§ 88.827 Additional frequencies in the 896-901/935-940 MHz band.

(a) The channels listed in Table D-7 are available for assignment in Regions 1-6 if the maximum power flux density (PFD) of the station's transmitted signal does not exceed the limits specified in Tables D-8 and D-9. The spreading loss must be calculated using the free space formula taking into account any antenna discrimination in the direction of the border.

Table D-7

ADDITIONAL FREQUENCIES AVAILABLE IN REGIONS 1-6		
Region	Frequencies (MHz)	Effective Radiated Power
1	937.5125-939.9625	See Table D-8
2	936.5125-939.9875	See Table D-8
3	939.2625-939.9875	See Table D-8
4	937.5125-939.9625	See Table D-8
5	937.5125-939.9625	See Table D-9
6	937.5125-939.9625	See Table D-8

(b) Authorizations for stations using these channels will be secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding the values specified in Tables D-8 or D-9 at or beyond the U.S./Canada border.

TABLE D-8

MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO EFFECTIVE ANTENNA HEIGHT (REGIONS 1-4, 6)		
Effective Antenna Height (EAH)		PFD
Feet	Meters	dBW/m ²
0-500	0-152	-84
501-1000	153-305	-90
1001-1500	306-457	-95
1501-2000	458-609	-98
2001-2500	610-762	-101
2500-3000	763-914	-101
3001-3500	915-1066	-103
3501-4000	1067-1219	-104
Above 4000	Above 1219	-104

TABLE D-9

MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO ANTENNA HEIGHT ABOVE MEAN SEA LEVEL (REGION 5)		
Antenna Height Above Mean Sea Level		PFD
Feet	Meters	dBW/m2
0-1650	0-503	-87
1651-2000	504-609	-88.5
2001-2500	610-762	-91
2501-3000	763-914	-92.5
3001-3500	915-1066	-94
3501-4000	1067-1219	-95
4001-4500	1220-1371	-95.5
4501-5000	1372-1523	-96
Above 5000	Above 1523	-107

PUBLIC SAFETY 821-824/866-869 MHZ

§ 88.831 Public Safety National Plan.

The Commission has established a National Plan that specifies special policies and procedures governing the Public Safety Radio Service. The National Plan is contained in the Report and Order in General Docket No. 87-112. The principal spectrum resource for the National Plan is the 821-824 MHz and the 866-869 MHz bands. The National plan establishes planning regions covering all parts of the United States, Puerto Rico, and the U.S. Virgin Islands. No assignments will be made in the 821-824 MHz and 866-869 MHz bands until a regional plan for the area has been accepted by the Commission.

§ 88.833 821-824/866-869 MHz band frequencies.

The following base station frequencies, together with the paired mobile and control station transmitting frequencies 45 MHz lower, are available for assignment:

866.0125, 866.0375, 866.0500, 866.0625, 866.0750, 866.0875, 866.1000,
 866.1125, 866.1250, 866.1375, 866.1500, 866.1625, 866.1750, 866.1875,
 866.2000, 866.2125, 866.2250, 866.2375, 866.2500, 866.2625, 866.2750,
 866.2875, 866.3000, 866.3125, 866.3250, 866.3375, 866.3500, 866.3625,
 866.3750, 866.3875, 866.4000, 866.4125, 866.4250, 866.4375, 866.4500,
 866.4625, 866.4750, 866.4875, 866.5125, 866.5375, 866.5500, 866.5625,
 866.5750, 866.5875, 866.6000, 866.6125, 866.6250, 866.6375, 866.6500,
 866.6625, 866.6750, 866.6875, 866.7000, 866.7125, 866.7250, 866.7375,
 866.7500, 866.7625, 866.7750, 866.7875, 866.8000, 866.8125, 866.8250,
 866.8375, 866.8500, 866.8625, 866.8750, 866.8875, 866.9000, 866.9125,
 866.9250, 866.9375, 866.9500, 866.9625, 866.9750, 866.9875, 867.0125,
 867.0375, 867.0500, 867.0625, 867.0750, 867.0875, 867.1000, 867.1125,

867.1250, 867.1375, 867.1500, 867.1625, 867.1750, 867.1875, 867.2000,
 867.2125, 867.2250, 867.2375, 867.2500, 867.2625, 867.2750, 867.2875,
 867.3000, 867.3125, 867.3250, 867.3375, 867.3500, 867.3625, 867.3750,
 867.3875, 867.4000, 867.4125, 867.4250, 867.4375, 867.4500, 867.4625,
 867.4750, 867.4875, 867.5125, 867.5375, 867.5500, 867.5625, 867.5750,
 867.5875, 867.6000, 867.6125, 867.6250, 867.6375, 867.6500, 867.6625,
 867.6750, 867.6875, 867.7000, 867.7125, 867.7250, 867.7375, 867.7500,
 867.7625, 867.7750, 867.7875, 867.8000, 867.8125, 867.8250, 867.8375,
 867.8500, 867.8625, 867.8750, 867.8875, 867.9000, 867.9125, 867.9250,
 867.9375, 867.9500, 867.9625, 867.9750, 867.9875, 868.0125, 868.0375,
 868.0500, 868.0625, 868.0750, 868.0875, 868.1000, 868.1125, 868.1250,
 868.1375, 868.1500, 868.1625, 868.1750, 868.1875, 868.2000, 868.2125,
 868.2250, 868.2375, 868.2500, 868.2625, 868.2750, 868.2875, 868.3000,
 868.3125, 868.3250, 868.3375, 868.3500, 868.3625, 868.3750, 868.3875,
 868.4000, 868.4125, 868.4250, 868.4375, 868.4500, 868.4625, 868.4750,
 868.4875, 868.5000, 868.5125, 868.5250, 868.5375, 868.5500, 868.5625,
 868.5750, 868.5875, 868.6000, 868.6125, 868.6250, 868.6375, 868.6500,
 868.6625, 868.6750, 868.6875, 868.7000, 868.7125, 868.7250, 868.7375,
 868.7500, 868.7625, 868.7750, 868.7875, 868.8000, 868.8125, 868.8250,
 868.8375, 868.8500, 868.8625, 868.8750, 868.8875, 868.9000, 868.9125,
 868.9250, 868.9375, 868.9500, 868.9625, 868.9750, 868.9875

The following frequencies are available only for mutual aid purposes as defined in Gen. Docket No. 87-112; 866.0125, 866.5125, 867.0125, 867.5125 and 868.0125 MHz.

§ 88.837 821-824/866-869 MHz band frequencies in United States/Mexico border area.

(a) **Available Frequencies.** A total of 107 frequency pairs are available in the United States/Mexico border area:

Base Frequency	Mobile Frequency	Country
866.0125	821.0125	Both Countries
866.0250	821.0250	Not Available
866.0375	821.0375	U.S.
866.0500	821.0500	U.S.
866.0625	821.0625	U.S.
866.0750	821.0750	U.S.
866.0875	821.0875	U.S.
866.1000	821.1000	U.S.
866.1125	821.1125	U.S.
866.1250	821.1250	U.S.
866.1375	821.1375	U.S.
866.1500	821.1500	Guard Channel
866.1625	821.1625	MEXICO
866.1750	821.1750	MEXICO
866.1875	821.1875	MEXICO
866.2000	821.2000	MEXICO
866.2125	821.2125	MEXICO

866.2250	821.2250	MEXICO
866.2375	821.2375	MEXICO
866.2500	821.2500	MEXICO
866.2625	821.2625	MEXICO
866.2750	821.2750	MEXICO
866.2875	821.2875	MEXICO
866.3000	821.3000	MEXICO
866.3125	821.3125	MEXICO
866.3250	821.3250	MEXICO
866.3375	821.3375	MEXICO
866.3500	821.3500	MEXICO
866.3625	821.3625	MEXICO
866.3750	821.3750	Guard Channel
866.3875	821.3875	U.S.
866.4000	821.4000	U.S.
866.4125	821.4125	U.S.
866.4250	821.4250	U.S.
866.4375	821.4375	U.S.
866.4500	821.4500	U.S.
866.4625	821.4625	U.S.
866.4750	821.4750	U.S.
866.4875	821.4875	U.S.
866.5000	821.5000	Not Available
866.5125	821.5125	Both Countries
866.5250	821.5250	Not Available
866.5375	821.5375	U.S.
866.5500	821.5500	U.S.
866.5625	821.5625	U.S.
866.5750	821.5750	U.S.
866.5875	821.5875	U.S.
866.6000	821.6000	U.S.
866.6125	821.6125	U.S.
866.6250	821.6250	U.S.
866.6375	821.6375	U.S.
866.6500	821.6500	Guard Channel
866.6625	821.6625	MEXICO
866.6750	821.6750	MEXICO
866.6875	821.6875	MEXICO
866.7000	821.7000	MEXICO
866.7125	821.7125	MEXICO
866.7250	821.7250	MEXICO
866.7375	821.7375	MEXICO
866.7500	821.7500	MEXICO
866.7625	821.7625	MEXICO
866.7750	821.7750	MEXICO
866.7875	821.7875	MEXICO
866.8000	821.8000	MEXICO
866.8125	821.8125	MEXICO
866.8250	821.8250	MEXICO
866.8375	821.8375	MEXICO
866.8500	821.8500	MEXICO
866.8625	821.8625	MEXICO

866.8750	821.8750	Guard Channel
866.8875	821.8875	U.S.
866.9000	821.9000	U.S.
866.9125	821.9125	U.S.
866.9250	821.9250	U.S.
866.9375	821.9375	U.S.
866.9500	821.9500	U.S.
866.9625	821.9625	U.S.
866.9750	821.9750	U.S.
866.9875	821.9875	U.S.
867.0000	822.0000	Not Available
867.0125	822.0125	Both Countries
867.0250	822.0250	Not Available
867.0375	822.0375	U.S.
867.0500	822.0500	U.S.
867.0625	822.0625	U.S.
867.0750	822.0750	U.S.
867.0875	822.0875	U.S.
867.1000	822.1000	U.S.
867.1125	822.1125	U.S.
867.1250	822.1250	U.S.
867.1375	822.1375	U.S.
867.1500	822.1500	Guard Channel
867.1625	822.1625	MEXICO
867.1750	822.1750	MEXICO
867.1875	822.1875	MEXICO
867.2000	822.2000	MEXICO
867.2125	822.2125	MEXICO
867.2250	822.2250	MEXICO
867.2375	822.2375	MEXICO
867.2500	822.2500	MEXICO
867.2625	822.2625	MEXICO
867.2750	822.2750	MEXICO
867.2875	822.2875	MEXICO
867.3000	822.3000	MEXICO
867.3125	822.3125	MEXICO
867.3250	822.3250	MEXICO
867.3375	822.3375	MEXICO
867.3500	822.3500	MEXICO
867.3625	822.3625	MEXICO
867.3750	822.3750	Guard Channel
867.3875	822.3875	U.S.
867.4000	822.4000	U.S.
867.4125	822.4125	U.S.
867.4250	822.4250	U.S.
867.4375	822.4375	U.S.
867.4500	822.4500	U.S.
867.4625	822.4625	U.S.
867.4750	822.4750	U.S.
867.4875	822.4875	U.S.
867.5000	822.5000	Not Available
867.5125	822.5125	Both Countries

867.5250	822.5250	Not Available
867.5375	822.5375	U.S.
867.5500	822.5500	U.S.
867.5625	822.5625	U.S.
867.5750	822.5750	U.S.
867.5875	822.5875	U.S.
867.6000	822.6000	U.S.
867.6125	822.6125	U.S.
867.6250	822.6250	U.S.
867.6375	822.6375	U.S.
867.6500	822.6500	Guard Channel
867.6625	822.6625	MEXICO
867.6750	822.6750	MEXICO
867.6875	822.6875	MEXICO
867.7000	822.7000	MEXICO
867.7125	822.7125	MEXICO
867.7250	822.7250	MEXICO
867.7375	822.7375	MEXICO
867.7500	822.7500	MEXICO
867.7625	822.7625	MEXICO
867.7750	822.7750	MEXICO
867.7875	822.7875	MEXICO
867.8000	822.8000	MEXICO
867.8125	822.8125	MEXICO
867.8250	822.8250	MEXICO
867.8375	822.8375	MEXICO
867.8500	822.8500	MEXICO
867.8625	822.8625	Guard Channel
867.8750	822.8750	U.S.
867.8875	822.8875	U.S.
867.9000	822.9000	U.S.
867.9125	822.9125	U.S.
867.9250	822.9250	U.S.
867.9375	822.9375	U.S.
867.9500	822.9500	U.S.
867.9625	822.9625	U.S.
867.9750	822.9750	U.S.
867.9875	822.9875	U.S.
868.0000	823.0000	Not Available
868.0125	823.0125	Both Countries
868.0250	823.0250	Not Available
868.0375	823.0375	U.S.
868.0500	823.0500	U.S.
868.0625	823.0625	U.S.
868.0750	823.0750	U.S.
868.0875	823.0875	U.S.
868.1000	823.1000	U.S.
868.1125	823.1125	U.S.
868.1250	823.1250	U.S.
868.1375	823.1375	U.S.
868.1500	823.1500	Guard Channel
868.1625	823.1625	MEXICO

868.1750	823.1750	MEXICO
868.1875	823.1875	MEXICO
868.2000	823.2000	MEXICO
868.2125	823.2125	MEXICO
868.2250	823.2250	MEXICO
868.2375	823.2375	MEXICO
868.2500	823.2500	MEXICO
868.2625	823.2625	MEXICO
868.2750	823.2750	MEXICO
868.2875	823.2875	MEXICO
868.3000	823.3000	MEXICO
868.3125	823.3125	MEXICO
868.3250	823.3250	MEXICO
868.3375	823.3375	MEXICO
868.3500	823.3500	MEXICO
868.3625	823.3625	Guard Channel
868.3750	823.3750	U.S.
868.3875	823.3875	U.S.
868.4000	823.4000	U.S.
868.4125	823.4125	U.S.
868.4250	823.4250	U.S.
868.4375	823.4375	U.S.
868.4500	823.4500	U.S.
868.4625	823.4625	U.S.
868.4750	823.4750	U.S.
868.4875	823.4875	U.S.
868.5000	823.5000	U.S.
868.5125	823.5125	U.S.
868.5250	823.5250	U.S.
868.5375	823.5375	U.S.
868.5500	823.5500	U.S.
868.5625	823.5625	U.S.
868.5750	823.5750	U.S.
868.5875	823.5875	U.S.
868.6000	823.6000	U.S.
868.6125	823.6125	Guard Channel
868.6250	823.6250	MEXICO
868.6375	823.6375	MEXICO
868.6500	823.6500	MEXICO
868.6625	823.6625	MEXICO
868.6750	823.6750	MEXICO
868.6875	823.6875	MEXICO
868.7000	823.7000	MEXICO
868.7125	823.7125	MEXICO
868.7250	823.7250	MEXICO
868.7375	823.7375	MEXICO
868.7500	823.7500	MEXICO
868.7625	823.7625	MEXICO
868.7750	823.7750	MEXICO
868.7875	823.7875	MEXICO
868.8000	823.8000	MEXICO
868.8125	823.8125	MEXICO

868.8250	823.8250	MEXICO
868.8375	823.8375	MEXICO
868.8500	823.8500	MEXICO
868.8625	823.8625	MEXICO
868.8750	823.8750	MEXICO
868.8875	823.8875	MEXICO
868.9000	823.9000	MEXICO
868.9125	823.9125	Guard Channel
868.9250	823.9250	U.S.
868.9375	823.9375	U.S.
868.9500	823.9500	U.S.
868.9625	823.9625	U.S.
868.9750	823.9750	U.S.
868.9875	823.9875	U.S.

The following frequencies are available only for mutual aid purposes as defined in Gen. Docket No. 87-112; 866.0125, 866.5125, 867.0125, 867.5125 and 868.0125 MHz.

(b) **Power and Antenna Height Limitations.** The frequencies available for licensing in this band within 110 kilometers (68.4 miles) of the Mexico border listed in para. (a) of this section are subject to Effective Radiated Power (ERP) and Antenna Height limitations as indicated in the table below.

Table D-10

Limits of Effective Radiated Power (ERP) Corresponding to Antenna Heights of Base Stations in the 821-824/866-869 MHz Band within 110 kilometers (68.4 miles) of the Mexican Border		
Antenna Height Above Mean Sea Level		ERP
Meters	Feet	Watts (maximum)
0 - 503	0 - 1650	500
504 - 609	1651 - 2000	350
610 - 762	2001 - 2500	200
763 - 914	2501 - 3000	140
915 - 1066	3001 - 3500	100
1067 - 1219	3501 - 4000	75
1220 - 1371	4001 - 4500	70
1372 - 1523	4501 - 5000	65
Above 1523	Above 5000	5

(c) **Additional Frequencies.** In addition, all frequencies designated for use within Mexico in this band are available for assignment within 110 kilometers (68.4 miles) of the Mexico border if the maximum power flux density (PFD) of the station's transmitted signal at any point at or beyond the border does not

exceed -107 dBW/m²>. The spreading loss shall be calculated using the free space formula taking into account any antenna discrimination in the direction of the border. Authorizations for stations using channels allotted primarily to Mexico will be secondary to Mexican operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding -107 dBW/m²>.

§ 88.841 821-824/866-869 MHz band in the U.S./Canadian border area.

For the allotment of the 821-824/866-869 MHz band, the U.S. Canadian Border is divided into eight geographic regions. See § 88.811(b) (900 MHz). Power and antenna height are subject to the limitations at § 817.

(a) **Available Frequencies.** The frequencies in the 821-824/866-869 MHz band listed at § 88.831 are available to eligible applicants in the Public Safety Category for use in the U.S./Canada border area as follows:

<u>Region</u>	<u>Frequency Band (MHz)</u>
1	867.5125 - 868.9875
2	868.1125 - 868.9875
3	866.4625 - 868.9875
4	867.5125 - 868.9875
5	867.5125 - 868.9875
6	867.5125 - 868.9875
7	866.0125 - 868.9875
8	866.0125 - 868.9875

Additionally, 866.0125, 866.5125, 867.0125, 867.5125 and 868.0125 MHz are available in all regions only for mutual aid purposes as defined in Gen. Docket No. 87-112.

(b) **Restricted Use in Part of Region 1.** Channel assignments for stations to be located in the geographic area in Region 1 enclosed by the United States-Canada border, 71° W longitude and the line beginning at the intersection of 44°25'N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along 70° W longitude to the intersection of 45°45'N, then running West along 45°45'N to the intersection of the United States--Canada border, will be only for every other frequency, beginning with 867.5375 MHz and ending with 868.0875 MHz.

(c) **Restricted Use in Part of Region 3.** Channel assignments for stations to be located in the geographical area in Region 3 enclosed by 81°W longitude, the arc of a circle of 100 km radius centered at 42°39'30"N latitude and 81°W longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80°30'W longitude to intersect the United States-Canada border West of 81°W, and the United States-Canada border, will be only for every other frequency beginning with 866.4625 MHz, and ending with 868.0875 MHz. Coordination with Canada will be required for these channels. U.S. stations must protect Canadian stations operating on 866.4625-868.0875 MHz within an area of 30 km radius from the center city coordinates of London, Ontario (42° 59' N, 81° 14' W).

(d) **Additional Frequencies.** The frequencies listed below are available for assignment in Regions 1-6 if the maximum power flux density (PFD) of the station's transmitted signal does not exceed the limits specified in Tables D-8 and D-9 at § 88.827. The spreading loss must be calculated using the free space formula taking into account any antenna discrimination in the direction of the border.

Table D-10

Additional Frequencies Available (Regions 1-6)		
Region	Frequencies	Effective Radiated Power
1	866.0125-867.4875	See Table D-8
2	866.0125-868.1000	See Table D-8
3	866.0125-866.4500	See Table D-8
4	866.0125-867.4875	See Table D-8
5	866.0125-867.4875	See Table D-9
6	866.0125-867.4875	See Table D-8

Authorizations for stations using these channels will be secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding the values specified in Tables D-8 or D-9 at § 88.827 at or beyond the U.S./Canada border.

(e) **Additional Frequencies in Region 5.** In Region 5, the frequencies 866.0125-867.4875 MHz may be authorized in the United States under the conditions at § 88.825.

Subpart E Special Operations.

§ 88.901 Scope.

The rules in this subpart govern the availability of specific channels for a wide variety of operations including two-way base/mobile, one-way including paging, and operational fixed use. Each type of operation has specific policy and technical rules in addition to or instead of those at Subparts B and C.

LOW-POWER OPERATIONS

§ 88.905 Low-power mobile operations.

Sections 88.907-88.911 govern the assignment and use of certain frequencies allocated specifically for low power operations.

§ 88.907 Low-power frequencies.

(a) Low power operations are secondary, i.e., must protect all other licensed operations and must accept interference from any other operation, and are not available on an exclusive basis. All these frequencies are available for either data or voice use.

(b) The following 3 frequencies in the 30-50 MHz band and 153 frequencies in the 450-470 MHz band are available to eligibles in the Public Safety Radio Service.

33.42, 39.06, 46.30, 150.770, 150.775, 150.780, 150.785, 150.790, 150.795,
453.0125, 453.0375, 453.0625, 453.0875, 453.1125, 453.1375, 453.1625,
453.1875, 453.2125, 453.2375, 453.2625, 453.2875, 453.3125, 453.3375,
453.3625, 453.3875, 453.4125, 453.4375, 453.4625, 453.4875, 453.5125,
453.5375, 453.5625, 453.5875, 453.6125, 453.6375, 453.6625, 453.6875,
453.7125, 453.7375, 453.7625, 453.7875, 453.8125, 453.8375, 453.8625,
453.8875, 453.9125, 453.9375, 453.9625, 453.9875, 458.0375, 458.0625,
458.0875, 458.1125, 458.1375, 458.1625, 458.1875, 458.2125, 458.2375,
458.2625, 458.2875, 458.3125, 458.3375, 458.3625, 458.3875, 458.4125,
458.4375, 458.4625, 458.4875, 458.5125, 458.5375, 458.5625, 458.5875,
458.6125, 458.6375, 458.6625, 458.6875, 458.7125, 458.7375, 458.7625,
458.7875, 458.8125, 458.8375, 458.8625, 458.8875, 458.9125, 458.9375,
458.9625, 458.9875, 460.0375, 460.0625, 460.0875, 460.1125, 460.1375,
460.1625, 460.1875, 460.2125, 460.2375, 460.2625, 460.2875, 460.3125,
460.3375, 460.3625, 460.3875, 460.4125, 460.4375, 460.4625, 460.4875,
460.5125, 460.5375, 460.5625, 460.5875, 460.6125, 460.6375, 462.9375,
462.9625, 462.9875, 463.0125, 463.0375, 463.0625, 463.0875, 463.1125,
463.1375, 463.1625, 463.1875, 465.0125, 465.0375, 465.0625, 465.0875,
465.1125, 465.1375, 465.1625, 465.1875, 465.2125, 465.2375, 465.2625,
465.2875, 465.3125, 465.3375, 465.3625, 465.3875, 465.4125, 465.4375,
465.4625, 465.4875, 465.5125, 465.5375, 465.5625, 465.5875, 465.6125,

465.6375, 467.9375, 467.9625, 467.9875, 468.0125, 468.0375, 468.0625,
468.0875, 468.1125, 468.1375, 468.1625, 468.1875

(c) The following 52 frequencies in the 450-470 MHz band are available to eligibles in the Non-Commercial Radio Service.

457.515625, 457.521875, 457.528125, 457.534375, 457.540625, 457.546875,
457.553125, 457.559375, 457.565625, 457.571875, 457.578125, 457.584375,
457.590625, 457.596875, 457.603125, 457.609375, 467.740625, 467.746875,
467.753125, 467.759375, 467.765625, 467.771875, 467.778125, 467.784375,
467.790625, 467.796875, 467.803125, 467.809375, 467.815625, 467.821875,
467.828125, 467.834375, 467.840625, 467.846875, 467.853125, 467.859375,
467.865625, 467.871875, 467.878125, 467.884375, 467.890625, 467.896875,
467.903125, 467.909375, 467.915625, 467.921875, 467.928125, 467.934375

(d) The following 8 frequencies in the 25-50 MHz band, 200 frequencies in the 72-76 MHz band, 28 frequencies in the 150-174 MHz band, 5 frequencies in the 220-221 MHz band (which are paired with mobile only frequencies 1 MHz higher) and 538 frequencies in the 450-470 MHz band are available to eligibles in the General Category Pool.

27.51, 27.53, 30.84, 33.12, 33.14, 33.40, 35.02, 42.98, 72.0125, 72.0175,
72.0225, 72.0275, 72.0325, 72.0375, 72.0425, 72.0475, 72.0525, 72.0575,
72.0625, 72.0675, 72.0725, 72.0775, 72.0825, 72.0875, 72.0925, 72.0975,
72.1025, 72.1075, 72.1125, 72.1175, 72.1225, 72.1275, 72.1325, 72.1375,
72.1425, 72.1475, 72.1525, 72.1575, 72.1625, 72.1675, 72.1725, 72.1775,
72.1825, 72.1875, 72.1925, 72.1975, 72.2025, 72.2075, 72.2125, 72.2175,
72.2225, 72.2275, 72.2325, 72.2375, 72.2425, 72.2475, 72.2525, 72.2575,
72.2625, 72.2675, 72.2725, 72.2775, 72.2825, 72.2875, 72.2925, 72.2975,
72.3025, 72.3075, 72.3125, 72.3175, 72.3225, 72.3275, 72.3325, 72.3375,
72.3425, 72.3475, 72.3525, 72.3575, 72.3625, 72.3675, 72.3725, 72.3775,
72.3825, 72.3875, 72.3925, 72.3975, 72.4025, 72.4075, 72.4325, 72.4375,
72.4425, 72.4475, 72.4725, 72.4775, 72.4825, 72.4875, 72.5125, 72.5175,
72.5225, 72.5275, 72.5525, 72.5575, 72.5625, 72.5675, 72.5925, 72.5975,
72.6025, 72.6075, 74.6025, 74.6075, 74.6125, 74.6175, 74.6225, 74.6275,
74.6325, 74.6375, 74.6425, 74.6475, 74.6525, 74.6575, 74.6625, 74.6675,
74.6725, 74.6775, 74.6825, 74.6875, 74.6925, 74.6975, 74.7025, 74.7075,
74.7125, 74.7175, 74.7225, 74.7275, 74.7325, 74.7375, 74.7425, 74.7475,
74.7525, 74.7575, 74.7625, 74.7675, 74.7725, 74.7775, 74.7825, 74.7875,
74.7925, 74.7975, 75.2025, 75.2075, 75.2125, 75.2175, 75.2225, 75.2275,
75.2325, 75.2375, 75.2425, 75.2475, 75.2525, 75.2575, 75.2625, 75.2675,
75.2725, 75.2775, 75.2825, 75.2875, 75.2925, 75.2975, 75.3025, 75.3075,
75.3125, 75.3175, 75.3225, 75.3275, 75.3325, 75.3375, 75.3425, 75.3475,
75.3525, 75.3575, 75.3625, 75.3675, 75.3725, 75.3775, 75.3825, 75.3875,
75.3925, 75.3975, 75.4325, 75.4375, 75.4425, 75.4475, 75.4725, 75.4775,
75.4825, 75.4875, 75.5125, 75.5175, 75.5225, 75.5275, 75.5525, 75.5575,
75.5625, 75.5675, 75.5925, 75.5975, 75.6025, 75.6075, 154.570, 154.575,
154.600, 154.605, 155.410, 155.425, 155.440, 155.455, 155.470, 155.485,
155.500, 155.515, 155.530, 155.545, 155.560, 155.575, 155.590, 155.605,
155.620, 155.635, 155.650, 155.665, 155.680, 155.695, 155.710, 155.725,
155.740, 155.755, 220.9775, 220.9825, 220.9875, 220.9925, 220.9975, 221.9775,
221.9825, 221.9875, 221.9925, 221.9975, 451.0375, 451.0625, 451.0875,

451.1125, 451.1375, 451.1625, 451.1875, 451.2125, 451.2375, 451.2625,
451.2875, 451.3125, 451.3375, 451.3625, 451.3875, 451.4125, 451.4375,
451.4625, 451.4875, 451.5125, 451.5375, 451.5625, 451.5875, 451.6125,
451.6375, 451.6625, 451.6875, 451.7125, 451.7375, 451.7625, 452.0375,
452.0625, 452.0875, 452.1125, 452.1375, 452.1625, 452.1875, 452.2125,
452.2375, 452.2625, 452.2875, 452.3125, 452.3375, 452.3625, 452.3875,
452.4125, 452.4375, 452.4625, 452.4875, 452.5125, 452.5375, 452.5625,
452.5875, 452.6125, 452.6375, 452.6625, 452.6875, 452.7125, 452.7375,
452.7625, 452.7875, 452.8125, 452.8375, 452.8625, 452.8875, 452.9125,
452.9375, 452.9625, 452.9875, 456.0375, 456.0625, 456.0875, 456.1125,
456.1375, 456.1625, 456.1875, 456.2125, 456.2375, 456.2625, 456.2875,
456.3125, 456.3375, 456.3625, 456.3875, 456.4125, 456.4375, 456.4625,
456.4875, 456.5125, 456.5375, 456.5625, 456.5875, 456.6125, 456.6375,
456.6625, 456.6875, 456.7125, 456.7375, 456.7625, 457.0375, 457.0625,
457.0875, 457.1125, 457.1375, 457.1625, 457.1875, 457.2125, 457.2375,
457.2625, 457.2875, 457.3125, 457.3375, 457.3625, 457.3875, 457.4125,
457.4375, 457.4625, 457.4875, 457.5125, 457.5375, 457.5625, 457.5875,
457.6125, 457.6375, 457.6625, 457.6875, 457.7125, 457.7375, 457.7625,
457.7875, 457.8125, 457.8375, 457.8625, 457.8875, 457.9125, 457.9375,
457.9625, 457.9875, 458.0125, 460.6625, 460.6875, 460.7125, 460.7375,
460.7625, 460.7875, 460.8125, 460.8375, 460.8625, 460.8875, 460.9125,
460.9375, 460.9625, 460.9875, 461.0125, 461.0375, 461.0625, 461.0875,
461.1125, 461.1375, 461.1625, 461.1875, 461.2125, 461.2375, 461.2625,
461.2875, 461.3125, 461.3375, 461.3625, 461.3875, 461.4125, 461.4375,
461.4625, 461.4875, 461.5125, 461.5375, 461.5625, 461.5875, 461.6125,
461.6375, 461.6625, 461.6875, 461.7125, 461.7375, 461.7625, 461.7875,
461.8125, 461.8375, 461.8625, 461.8875, 461.9125, 461.9375, 461.9625,
461.9875, 462.0125, 462.0375, 462.0625, 462.0875, 462.1125, 462.1375,
462.1625, 462.1875, 462.2125, 462.2375, 462.2625, 462.2875, 462.3125,
462.3375, 462.3625, 462.3875, 462.4125, 462.4375, 462.4625, 462.4875,
462.5125, 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875,
462.7125, 462.7375, 462.7625, 462.7875, 462.8125, 462.8375, 462.8625, 462.8875,
462.9125, 463.2125, 463.2375, 463.2625, 463.2875, 463.3125, 463.3375,
463.3625, 463.3875, 463.4125, 463.4375, 463.4625, 463.4875, 463.5125,
463.5375, 463.5625, 463.5875, 463.6125, 463.6375, 463.6625, 463.6875,
463.7125, 463.7375, 463.7625, 463.7875, 463.8125, 463.8375, 463.8625,
463.8875, 463.9125, 463.9375, 463.9625, 463.9875, 464.0125, 464.0375,
464.0625, 464.0875, 464.1125, 464.1375, 464.1625, 464.1875, 464.2125,
464.2375, 464.2625, 464.2875, 464.3125, 464.315625, 464.334375, 464.3375,
464.340625, 464.359375, 464.3625, 464.365625, 464.384375, 464.3875,
464.390625, 464.409375, 464.4125, 464.415625, 464.434375, 464.4375,
464.440625, 464.459375, 464.4625, 464.465625, 464.484375, 464.4875, 464.5125,
464.515625, 464.534375, 464.5375, 464.5625, 464.565625, 464.584375, 464.5875,
464.6125, 464.615625, 464.634375, 464.6375, 464.6625, 464.665625, 464.684375,
464.6875, 464.690625, 464.709375, 464.7125, 464.715625, 464.734375, 464.7375,
464.740625, 464.759375, 464.7625, 464.765625, 464.784375, 464.7875,
464.790625, 464.809375, 464.8125, 464.815625, 464.834375, 464.8375,
464.840625, 464.859375, 464.8625, 464.865625, 464.884375, 464.8875,
464.890625, 464.909375, 464.9125, 464.915625, 464.934375, 464.9375,
464.940625, 464.959375, 464.9625, 464.965625, 464.984375, 464.9875, 465.6625,
465.6875, 465.7125, 465.7375, 465.7625, 465.7875, 465.8125, 465.8375,
465.8625, 465.8875, 465.9125, 465.9375, 465.9625, 465.9875, 466.0125,
466.0375, 466.0625, 466.0875, 466.1125, 466.1375, 466.1625, 466.1875,

466.2125, 466.2375, 466.2625, 466.2875, 466.3125, 466.3375, 466.3625,
 466.3875, 466.4125, 466.4375, 466.4625, 466.4875, 466.5125, 466.5375,
 466.5625, 466.5875, 466.6125, 466.6375, 466.6625, 466.6875, 466.7125,
 466.7375, 466.7625, 466.7875, 466.8125, 466.8375, 466.8625, 466.8875,
 466.9125, 466.9375, 466.9625, 466.9875, 467.0125, 467.0375, 467.0625,
 467.0875, 467.1125, 467.1375, 467.1625, 467.1875, 467.2125, 467.2375,
 467.2625, 467.2875, 467.3125, 467.3375, 467.3625, 467.3875, 467.4125,
 467.4375, 467.4625, 467.4875, 467.5125, 467.5375, 467.5625, 467.5875,
 467.6125, 467.6375, 467.6625, 467.6875, 467.7125, 467.7375, 467.7625,
 467.7875, 467.8125, 467.8375, 467.8625, 467.8875, 467.9125, 468.2125,
 468.2375, 468.2625, 468.2875, 468.3125, 468.3375, 468.3625, 468.3875,
 468.4125, 468.4375, 468.4625, 468.4875, 468.5125, 468.5375, 468.5625,
 468.5875, 468.6125, 468.6375, 468.6625, 468.6875, 468.7125, 468.7375,
 468.7625, 468.7875, 468.8125, 468.8375, 468.8625, 468.8875, 468.9125,
 468.9375, 468.9625, 468.9875, 469.0125, 469.0375, 469.0625, 469.0875,
 469.1125, 469.1375, 469.1625, 469.1875, 469.2125, 469.2375, 469.2625,
 469.2875, 469.3125, 469.315625, 469.334375, 469.3375, 469.340625,
 469.359375, 469.3625, 469.365625, 469.384375, 469.3875, 469.390625,
 469.409375, 469.4125, 469.415625, 469.434375, 469.4375, 469.440625,
 469.459375, 469.4625, 469.465625, 469.484375, 469.4875, 469.5125,
 469.515625, 469.534375, 469.5375, 469.5625, 469.565625,
 469.584375, 469.5875, 469.6125, 469.615625, 469.634375, 469.6375,
 469.6625, 469.665625, 469.684375, 469.6875, 469.690625, 469.709375,
 469.7125, 469.715625, 469.734375, 469.7375, 469.740625, 469.759375,
 469.7625, 469.765625, 469.784375, 469.7875, 469.790625, 469.809375,
 469.8125, 469.815625, 469.834375, 469.8375, 469.840625, 469.859375,
 469.8625, 469.865625, 469.884375, 469.8875, 469.890625, 469.909375,
 469.9125, 469.915625, 469.934375, 469.9375, 469.940625, 469.959375,
 469.9625, 469.965625, 469.984375

§ 88.909 Power limitations.

The following power limitations apply to the frequencies listed at § 88.907.

(a) 25-50 MHz. Operation on these frequencies is limited to a maximum transmitter output power of 2 watt. The separation between the control point and the center of the radiating portion of the antenna of any base or fixed station (which will be licensed as a mobile unit) may not exceed 8 m (25 ft). Output power on the frequencies 33.42 and 46.30 MHz is limited to 10 watts.

(b) 72-76 MHz. Mobile operation is limited to a maximum transmitter output power of 1 watt. The antennas of transmitters operating on these frequencies must be directly mounted or installed upon the transmitting unit, except when permanently installed aboard a vehicle, antenna and transmitter may be separated as required for convenience in mounting.

(c) 150.770-155.755 MHz. Operation on these frequencies is limited to 2 watts and a maximum antenna height of 6.1 m (20 ft) above ground.

(d) 220.9775-221/221.9775-222 MHz. Frequencies in this band are limited to 2 watts ERP and a maximum antenna height of 6.1 m (20 ft) above ground.

(e) Public Safety Radio Service and General Category Pool 450-470 MHz.

(1) Operation on 450-470 MHz frequencies listed in §§ 88.907(b) and (d) is limited 2 watts.

(2) Antennas of mobile stations used as fixed stations communicating with one or more associated stations located within 45 degrees of azimuth must be directional and have a front to back ratio of at least 15 dB. Except as provided below, the height of the antenna used at any mobile station serving as a base, fixed or mobile relay station may not exceed 6.1 m (20 ft) above the ground.

(i) There is no limit on the length or height above ground of any commercially manufactured radiating transmission line if the transmission line is terminated in a nonradiating load and is routed at least 6.1 m (20 ft) interior to the edge of any structure or is routed below ground level.

(ii) Sea-based stations may utilize antennas mounted not more than 6.1 m (20 ft) above the man-made supporting structure, including antenna structures.

(f) Non-Commercial Radio Service 450-470 MHz.

(1) Operation on 450-470 MHz frequencies listed in § 88.907(c) is limited to 2 watts.

(2) Base and fixed stations may operate, licensed as mobile units, provided that the separation between the control point and the center of the antenna of any units so used does not exceed 8 m (25 ft).

(3) Cargo Loading. For mobile relay operations at a marine loading dock, the center of the radiating system must be located no more than 3 m (10 ft) above a vessel's highest working deck.

§ 88.911 Assignment limitations.

This section provides assignment limitations for the frequencies listed at § 88.907 in addition to or instead of those in Subpart B.

(a) Each authorized station will be licensed as a mobile station. Any units of such a station, however, may be used to provide the operational functions of a base or fixed station.

(b) 30.84, 33.14-42.98 and 150.770-150.795 MHz. These frequencies may not be used aboard aircraft.

(c) 35.02 MHz. This frequency is shared with physically handicapped paging systems. See 88.1079.

(d) 72-76 MHz.

(1) Mobile operation is subject to the condition that no interference is caused to the reception of television stations operating on channels 4 or 5. Interference will be considered to occur whenever reception of a regularly used television signal is impaired by signals radiated by stations operating under these rules regardless of the quality of such reception or the strength of the signal used. In order to minimize the hazard of such interference, the licensee must determine whether interference is being caused to television reception of receivers, other than those under the control of the licensee, that are located within 31 m (100 ft) of any point where the stations licensed under these rules may be operated. In any case, the licensee must correct, at its own expense, any such interference and if the interference cannot be eliminated by the application of suitable techniques, the licensee must suspend operation of the offending transmitter. If the complainant refuses to permit the licensee to apply remedial techniques that demonstrably will eliminate the interference without impairment of the original reception, the licensee is absolved of further responsibility.

(2) Horizontal polarization will not be allowed; and the gain of antennas must not exceed that of a halfwave dipole.

(e) 220.9750-221 MHz.

(1) The five frequencies in this band are for base station use, are paired with frequencies 1 MHz higher and restricted to data use (including transmission of text, control code, digitized voice) only.

(2) The frequencies in this band are available to both Federal Government and non-Federal Government applicants, and may be assigned singly or in contiguous channel groups.

(3) The frequencies in this band are set aside for data only operations until March 31, 2000. The term "data", for this purpose, includes the transmission of text, control codes, and other information typical of machine-to-machine communications. Digitized voice signals are considered data signals under this part.

(f) Public Safety Radio Service and General Category Pool 450-470 MHz.

(1) Mobile relay stations may be used.

(2) Wide area operations will not be authorized. The area of normal day-to-day operations must be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(g) Non-Commercial Radio Service 450-470 MHz.

(1) Frequencies in the 450-470 MHz band listed at § 88.907(c) may not be used aboard aircraft in flight.

(2) Mobile relay stations may be temporarily installed at or in the vicinity of a dock or cargo handling facility when a vessel is along side the dock or cargo handling facility. For this purpose, frequencies in the 457.5125-457.6125 MHz range may be paired with frequencies 10.225 MHz higher. The mobile relay must be used on the lower frequency of the pair.

(3) Simplex operations on the lower half of paired frequencies are permitted.

(4) These frequencies may be used for mobile operation for radio remote control and telemetering functions. A1D, A2D, F1D, or F2D emission may be authorized and mobile stations on the mobile only frequency used to control remote objects or devices may transmit with a continuous carrier.

§ 88.921 Secondary use of airport channels.

The frequencies 460.640625-460.884375/460.640625-460.884375 MHz may be assigned to low power (2 watts or less) stations in the Non-Commercial Radio Service for use in areas removed by 8 km (5 mi) from the boundaries of airports serving any urbanized areas of 200,000 or more population, U.S. Census on Population, 1960, vol. 1 table 23, page 1-50. All such use is restricted to the confines of a single building or complex of buildings, campus, industrial complex or manufacturing yard area. Also see § 88.729.

§ 88.931 Wireless microphone operations in the 169-172 MHz band.

(a) Available Frequencies. The following frequencies are available for wireless microphone operations to eligibles in this part:

169.445, 169.505, 170.245, 170.305, 171.045, 171.105, 171.845, 171.905 MHz

(b) Authorization Limitations.

(1) The emission bandwidth may not exceed 54 kHz and the output power may not exceed 50 milliwatts.

(2) The frequency stability of wireless microphones must limit the total emission to within ± 32.5 kHz of the assigned frequency.

(3) Wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference from wireless microphone operation is received by any Federal Government or non-Federal Government operation, the wireless microphone must cease operation on the frequency involved. Applications are subject to Government coordination.

(c) Stations authorized under this section are exempt from station identification.

§ 88.941 Public safety covert operations.

(a) Available Frequencies. A licensee may use, without special authorization from the Commission, any Public Safety Radio Service mobile service frequency between 37 and 952 MHz, listed in Subpart D or E of this part, for communications in connection with physical surveillance, stakeouts, raids, and other such activities. If spread spectrum transmitters are utilized, frequency hopping or direct sequence equipment may be employed.

(b) Such use will be secondary to operations of licensees regularly authorized on the assigned frequencies.

(c) The maximum output power for such operations is 2 watts.

(d) Transmitters, operating under this provision of the rules, are exempt from the station identification requirements of § 88.489.

(e) Spread spectrum frequency hopping transmitters must use at least 20 hopping frequencies and the average time of occupancy on any frequency must not be greater than 1/10 second in every 2 seconds.

ITINERANT OPERATIONS

§ 88.951 Itinerant operations.

Operation of a radio station is considered itinerant if the operation occurs at unspecified temporary sites. Use at a site is considered temporary if the system is in operation at that site for 180 days or less. Itinerant users should be aware that no protection is provided from other itinerant users.

§ 88.953 Itinerant frequencies.

(a) The following frequencies are available only to stations used in itinerant operations:

27.49 MHz, 31.44, 35.04, 43.04, 151.505, 151.510, 151.625, 151.630, 158.400, 158.405, 159.055, 159.070, 451.790625/456.790625, 451.796875/456.796875, 451.803125/456.803125, 451.809375/456.809375, 464.490625/469.490625, 464.496875/469.496875, 464.503125/469.503125, 464.509375/469.509375, 464.540625/469.540625, 464.546875/469.546875, 464.553125/469.553125, 464.559375/469.559375, 464.590625/469.590625, 464.609375/469.609375, 464.640625/469.640625, 464.659375/469.659375

(b) Both permanent and itinerant operations are permitted on the following frequencies:

30.64 MHz, 31.28, 31.32, 31.36, 31.40, 31.48, 31.52, 31.56, 31.60, 31.64, 31.68, 31.72, 31.76, 31.80, 31.84, 31.88, 31.92, 31.96, 35.28, 35.32, 35.36, 35.40, 35.44, 35.48, 35.52, 35.94, 35.96, 35.98, 43.02, 43.04, 43.06, 43.08,

43.10, 43.12, 43.14, 43.28, 43.32, 43.36, 43.40, 43.44, 43.48, 43.52, 49.54, 49.58.

(c) Itinerant operations may be conducted, with written concurrence from all relevant exclusive use overlay licensees (see § 88.179), on a secondary basis, on any channel/location that has an exclusive use overlay licensee.

§ 88.955 Application requirements.

(a) Coordination Exemption. Applications requesting a frequency designated only for itinerant operation (§ 88.953(a)) need not be accompanied by evidence of frequency coordination.

(b) The applicant must specify the general geographic area within which the operation will be confined. The area may be specified as a city, a county or counties, a state or states or other definable geographic area such as a specified radius in kilometers of a particular city or known geographic site.

§ 88.957 Power limitations.

Use of the itinerant frequencies 464.490625/469.490625, 464.496875/469.496875, 464.503125/469.503125, 464.509375/469.509375, 464.540625/469.540625, 464.546875/469.546875, 464.553125/469.553125, 464.559375/469.559375, 464.590625/469.590625, 464.609375/469.609375, 464.640625/469.640625, 464.659375/469.659375 MHz is limited to 35 watts output.

§ 88.965 Oil spill containment frequencies.

The frequencies 25.04, 25.08, 150.980, 150.985, 154.585, 154.590, 158.440, 158.445, 159.480, 159.485, 453.990625/458.990625, 453.996875/458.996875, 454.003125/459.003125, 454.009375/459.009375 MHz are available primarily for oil spill containment and cleanup operations and for training and drills essential in the preparations for the containment and cleanup of oil spills. They are secondarily available for general base-mobile operations on a non-interference basis. Secondary users of this frequency must suspend operations should oil spill containment and cleanup activities be present in their area of operation or upon notice by the Commission or a primary user that harmful interference is being caused to oil spill containment or cleanup activities in other areas. The frequency 25.08 MHz is available only on a secondary basis to stations in the maritime mobile service. In addition, the frequencies 36.25 and 41.71 MHz are available for shared use with the Federal Government on inland and coastal waterways. Operation on the frequencies 154.585 and 154.590 MHz is limited to a maximum output power of 20 watts.

NATIONWIDE OPERATIONS

§ 88.975 Nationwide system operations.

Sections 88.977-88.987 govern the assignment of channels in the 220-222 MHz band designated for nationwide use.

§ 88.977 Available frequencies.

Base Station Frequencies (MHz)	Number of Channel Pairs	Radio Service
220.1025 - 220.1225	5	General Pool
220.1275 - 220.1475	5	General Pool
220.2525 - 220.2975	10	Non-Commercial
220.4025 - 220.4225	5	Non-Commercial
220.4275 - 220.4475	5	Non-Commercial
220.5525 - 220.5725	5	Federal Government
220.5775 - 220.5975	5	Federal Government
220.7025 - 220.7475	10	Non-Commercial
220.7525 - 220.7725	5	General Pool
220.7775 - 220.7975	5	General Pool

Each of these frequencies is paired with a frequency 1 MHz higher for mobile use.

§ 88.979 Entry Criteria.

(a) As set forth in § 88.977, two blocks of ten and six blocks of five contiguous channels have been set aside for exclusive assignments for non-Federal Government use on a nationwide basis. Depending upon whether the application is for nationwide commercial or non-commercial channel blocks, it must comply with the following:

(1) Applicants for commercial nationwide channels must include certification that, within ten years of receiving a license, the applicant will construct a minimum of one base station in at least 70 different geographic areas; that base stations will be located in a minimum of 28 of the 100 urban areas listed in § 88.1601; that each base station in the top ten large urban areas listed in § 88.1601 will have all assigned nationwide channels constructed and in operation (regularly interacting with mobile and/or portable units); and that all other base stations will have a minimum of five of the assigned nationwide channels constructed and in operation. Applicants for non-commercial nationwide channels must include certification that, within five years of receiving a license, the applicant will construct a minimum of at least one base station in at least 70 different geographic areas designated in the application; that base stations will be located in a minimum of 28 of the 100 urban areas listed in § 88.1601; that each base station in the top ten urban areas designated § 88.1601 will have all assigned nationwide channels

constructed and in operation (regularly interacting with mobile and/or portable units); and that all other base stations will have a minimum of five of the assigned nationwide channels constructed and in operation.

(2) Applicants for commercial and non-commercial nationwide channels must include certification that they will meet the construction requirements set forth in § 88.983.

(3) Applicants for commercial nationwide channels must include a ten-year schedule detailing plans for construction of the proposed system. Applicants for non-commercial nationwide channels must include a five-year schedule detailing plans for construction of the proposed system.

(4) Applicants for commercial nationwide channels must include an itemized estimate of the cost of constructing 40 percent of the system and operating the system during the first four years of the license term. Applicants for non-commercial nationwide channels must include an itemized estimate of the cost of constructing the entire system within five years and operating the system during the first five years of the license term.

(5) Applicants for commercial nationwide channels must include proof that the applicant has sufficient financial resources to construct 40 percent of the system and operate the proposed system for the first four years of the license term; i.e., that the applicant has net current assets sufficient to cover estimated costs or a firm financial commitment sufficient to cover estimated costs. Applicants for non-commercial nationwide channels must include proof that the applicant has sufficient financial resources to construct the entire system within five years of the license grant and operate the proposed system for the first five years of the license term; i.e., that the applicant has net current assets to cover estimated costs or a firm financial commitment sufficient to cover estimated costs.

(6) Applicants for non-commercial nationwide licensing must also submit a certification demonstrating an actual presence or business plan necessitating internal communications capacity in the 70 or more markets identified in the license application.

(b) Applicants for commercial and non-commercial nationwide licensing relying on personal or internal resources for the showing required in paragraph (a) of this section must submit independently audited financial statements certified within one year of the date of the application showing net current assets sufficient to meet estimated construction and operating costs. Applicants for both commercial and non-commercial nationwide licensing must also submit an unaudited balance sheet, current within 60 days of the date of submission, that clearly shows the continued availability of sufficient net current assets to construct and operate the proposed system, and a certification by the applicant or an officer of the applicant organization attesting to the validity of the balance sheet.

(c) Applicants submitting evidence of a firm financial commitment for the showing required in paragraph (a) of this section must obtain the commitment from a *bona fide* commercially acceptable source, e.g., a state or federally

chartered bank or savings and loan institution, other recognized financial institution, the financial arm of a capital equipment supplier, or an investment banking house. If the lender is not a state or federally chartered bank or savings and loan institution, other recognized financial institution, the financial arm of a capital equipment supplier, or an investment banking house, the lender must also demonstrate that it has funds available to cover the total commitments it has made. The lender's commitment shall contain a statement that the lender:

(1) Has examined the financial condition of the applicant including an audited financial statement, and has determined that the applicant is creditworthy:

(2) Has examined the financial viability of the proposed system for which the applicant intends to use the commitment; and

(3) Is willing, if the applicant is seeking a commercial nationwide license, to provide a sum to the applicant sufficient to cover the realistic and prudent estimated costs of construction of 40 percent of the system and operation of the system for the first four years of the license term; and

(4) Is willing, if the applicant is seeking a non-commercial nationwide license, to provide a sum to the applicant sufficient to cover the realistic and prudent estimated costs of construction of a minimum of at least one base station in at least 70 different geographic areas designated in the application within five years of receiving a license, and operation of the system for the first five years of the license term.

(d) One System only. An applicant may not have any interest in another pending application for a nationwide system in the same category (10-channel non-commercial, 5-channel non-commercial, 5-channel commercial) in that band.

§ 88.981 Amendment of applications and assignment or transfer of authorizations.

(a) Except as indicated in paragraph (b) of this section the Commission will not consent to the following:

(1) Any request to amend an application so as to substitute a new entity as the applicant;

(2) Any application to transfer or assign a license for a nationwide system before the licensee has constructed at least 40% of the proposed system pursuant to the provisions of § 88.983.

(3) Any application to transfer or assign a nationwide non-commercial system before the expiration of the first ten-year license term.

(b) Exceptions. The Commission will grant the applications described in paragraph (a) of this section if: